

U.S. DEPARTMENT OF
ENERGY

Office of
ENERGY EFFICIENCY &
RENEWABLE ENERGY

Technology Integration

June 23, 2020

Vehicle Technologies Office

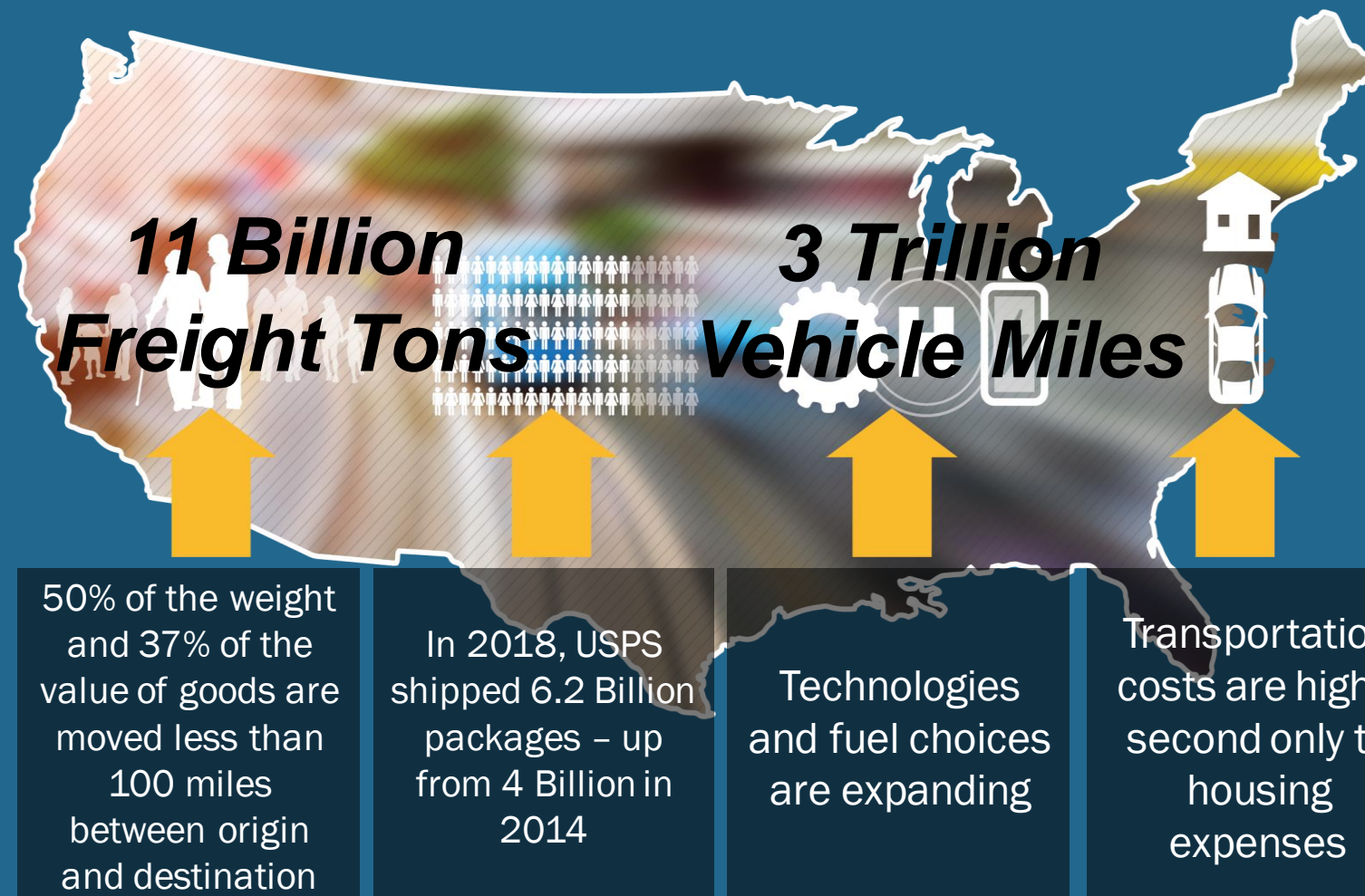
Mark Smith

Program Manager, Technology Integration



TRANSPORTATION IS FUNDAMENTAL TO

OUR WAY OF LIFE

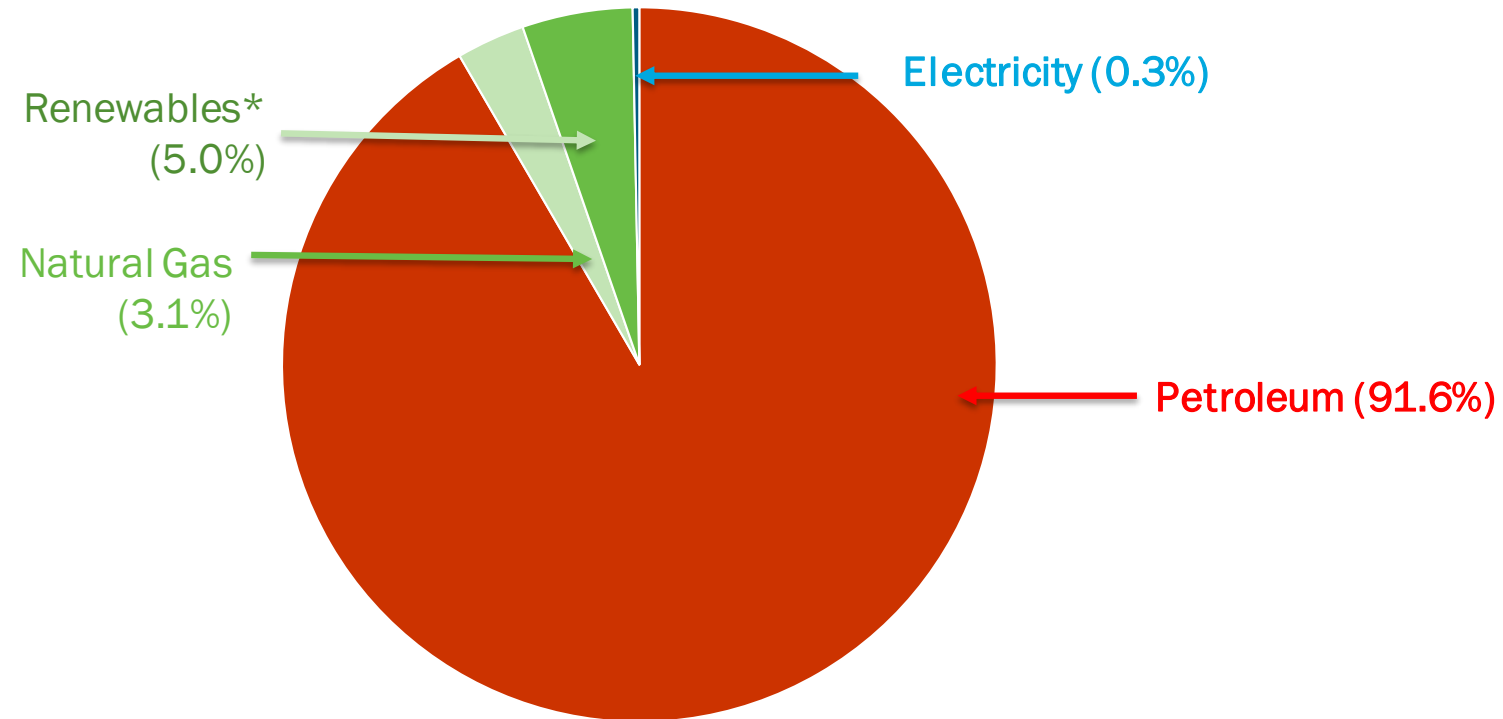


Transportation Energy Consumption (2018)

Petroleum Dominates Transportation Fuel Use

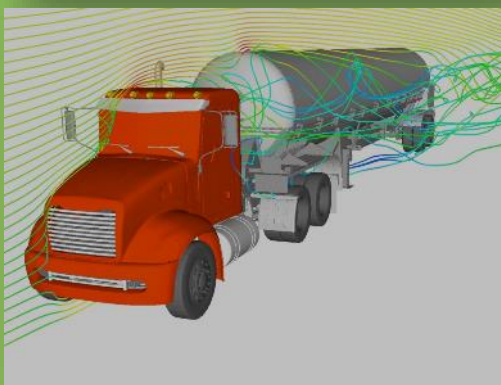
Transportation Fuel Type (2018)

(Total consumption: 28.4 trillion Btu)



Source: *Transportation Energy Data Book*, edition 37 (January 2019), Table 2.03
* "Renewables" include hydro-electric, geothermal, wind, solar, and bio-mass energy.

ALL LEVELS



Component

Vehicle

System

How Does Technology Integration Fit into VTO?



VTO develops advanced transportation technologies to:

- ✓ Improve energy **efficiency**
- ✓ Increase domestic energy **security**
- ✓ Reduce operating **cost** for consumers & business
- ✓ Improve global **competitiveness** of US economy

What Is Technology Integration?

- Technical Assistance Data Collection
- Advanced Vehicle Technology Competitions (EcoCAR Mobility Challenge)
- State and Alternative Fuel Provider Fleet Program



The Technology Integration Team



Dennis Smith



Linda Bluestein



Andrea Crooms



Mike Laughlin



Connie Bezanson



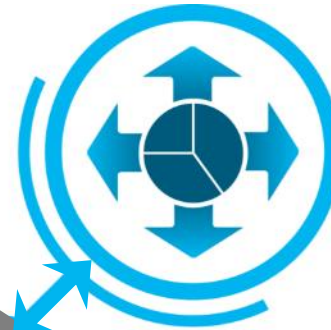
Jake Ward

Technology Integration Core Activities

Training,
Outreach,
Partnerships



Information &
Tools



Competitively
Awarded
Financial
Assistance



Technical
Assistance



Clean
Cities
Coalition
Activities

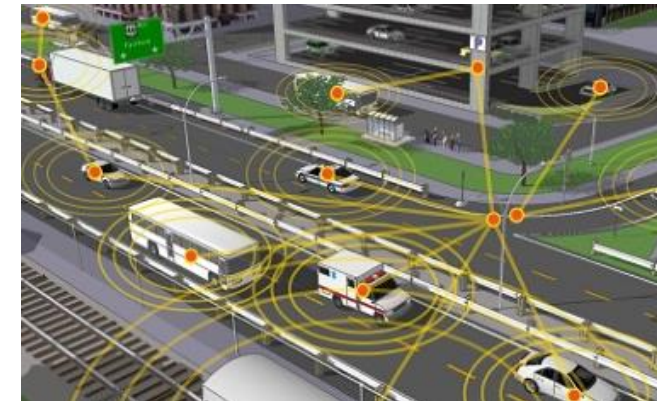


Technology Integration Focus Areas

Light, medium and heavy-duty vehicles



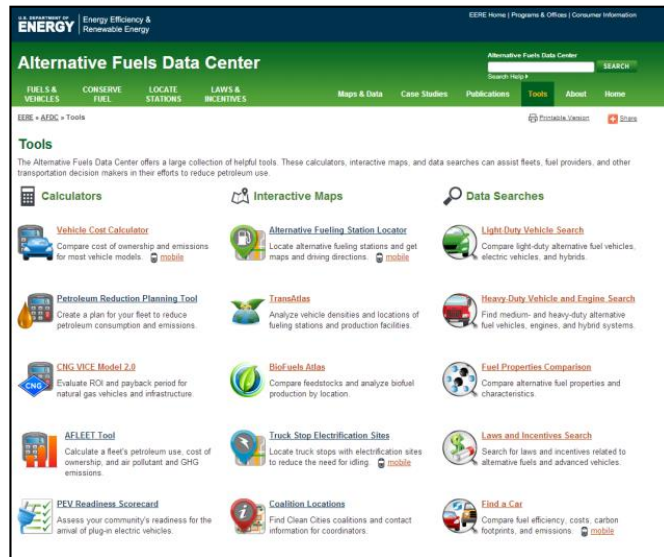
Alternative Fuel Infrastructure



Energy Efficient Mobility Systems and Technologies

Information & Tools

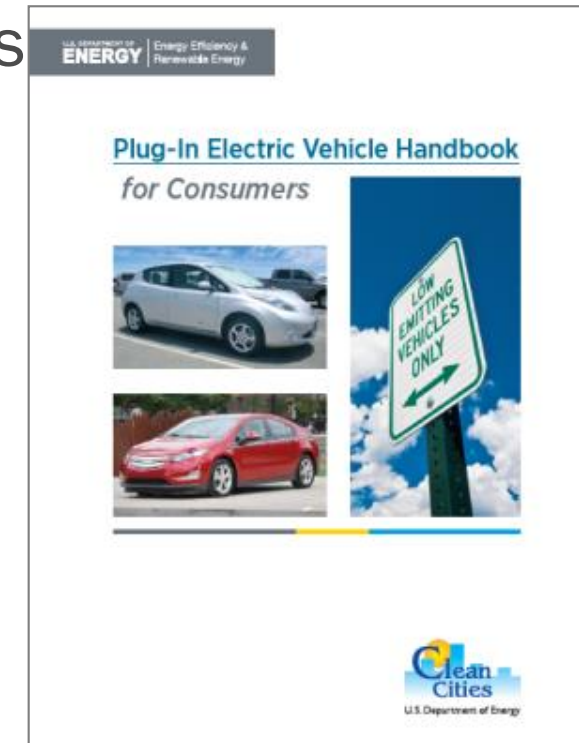
- Non-biased source of VTO data and information
- Fuel Economy Guide (FE.gov), Alt-Fuel Data Center (AFDC)
- On-line station locator, tools, cost calculators, other web and smart-phone apps & resources
- Fact Sheets, publications, handbooks, case studies
- Technical Response Service and Hotline



Online Tools



Technical Response Service



Publications

Technical and Problem Solving Assistance



- Capture lessons learned and best practices
- Technical Forums and User Groups
- Address unforeseen permitting & safety issues
- Identify chronic vehicle or infrastructure field problems
- Incident investigations
- Inform future R&D with real world experiences

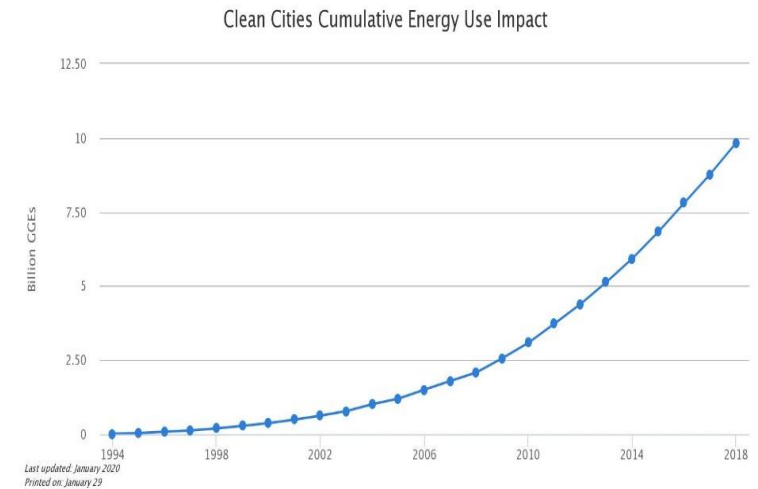
Nearly 100 Clean Cities coalitions with thousands of stakeholders, representing ~80% of U.S. population

Clean City Coalition Results

- Since 1993, the cumulative energy impact of Clean Cities coalition activities has surpassed 9.8 billion GGEs through alternative fuel use, fuel economy improvements, idle-reduction measures, and other strategies
- In 2018, nearly 1 million of the AFVs in operation were a result of Clean Cities coalition efforts.



* Connecticut Clean Cities Include:
- New Haven
- Connecticut Southwestern Area
- Capitol Clean Cities (Hartford area)



Funding Opportunities

Training – Experience/Education -- Safety -- Resiliency -- Infrastructure -- Living Labs









USING REAL-WORLD DATA TO UNDERSTAND ENERGY IMPACTS

LIVING LABS

3 Projects, \$4.9M in FY2017

15 Projects, \$27M in FY2018



ELECTRIC SHARED MOBILITY

Seattle, Portland, NYC, Denver
Uber, GM's Maven, BMW's ReachNow



ELECTRIC LAST MILE

Austin
Pecan Street, CapMetro



ENERGY EFFICIENT FREIGHT LOGISTICS

NYC-Albany Corridor
Rensselaer Polytechnic Institute, freight carriers & receivers, urban supply chain



High Performance Computing for Transportation Hubs



First/Last Mile for People/Goods Movement



System-Level Data for Energy Efficient Mobility



Fuel Efficient Platooning



Multi-Unit Dwelling & Curbside Residential Charging Innovation



Battery Recycling





THANK YOU

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